

What is claimed is:

1. An anti-skid device for use in cooperation with a vehicle wheel for positioning a traction member beneath the vehicle wheel, said anti-skid device  
5 comprising:

a frame assembly constructed and arranged to be attached to a vehicle;

a swing arm pivotally connected to said frame assembly by way of a double pivot link, said swing arm including a traction wheel with at least one traction member thereon; and

10 an electric, linear actuator having an extendable shaft is assembled to said swing arm by way of a connector, wherein extension of said shaft deploys said swing arm such that said traction wheel is placed against said vehicle wheel.

2. The anti-skid device of claim 1 wherein said traction wheel is connected to  
15 said swing arm by a wheel bolt.

3. The anti-skid device of claim 2 wherein said wheel bolt includes an enlarged spherical head.

20 4. The anti-skid device of claim 3 wherein the connection of said traction wheel to said swing arm includes a receiver plate.

5. The anti-skid device of claim 4 wherein said swing arm includes a mounting end that is attached to said receiver plate.

25 6. The anti-skid device of claim 1 wherein said swing arm includes a pivot end constructed and arranged with two clearance holes.

7. The anti-skid device of claim 6 wherein a first one of said two clearance  
30 holes is used for attaching the swing arm to said connector.

8. The anti-skid device of claim 7 wherein the other one of said two clearance holes is used for attaching the swing arm to said double pivot.

9. The anti-skid device of claim 8 wherein said connector is an angle joint  
5 constructed and arranged to enable limited twisting of the swing arm.

10. The anti-skid device of claim 1 which further includes a biasing spring constructed and arranged to maintain contact pressure of said traction wheel against said vehicle wheel.  
10

11. The anti-skid device of claim 10 wherein said linear actuator is attached to a movable pressure plate.

12. The anti-skid device of claim 11 wherein said frame assembly includes a back plate and said biasing spring is positioned between said movable pressure plate and said back plate.  
15

13. An anti-skid device for use in cooperation with a vehicle wheel for positioning a traction member beneath the vehicle wheel, said anti-skid device comprising:  
20 a frame assembly constructed and arranged to be attached to a vehicle;  
a swing arm pivotally connected to said frame assembly by a pivot member, said swing arm including a traction wheel with at least one traction member thereon; and  
an electric, linear actuator having an extendable shaft is assembled to said swing  
25 arm by way of a connector, wherein extension of said shaft deploys said swing arm such that said traction wheel is placed against said vehicle wheel.

14. The anti-skid device of claim 13 wherein said traction wheel is connected to said swing arm by a wheel bolt.  
30

15. The anti-skid device of claim 13 wherein said swing arm includes a pivot end constructed and arranged with two clearance holes.

16. The anti-skid device of claim 13 which further includes a biasing spring constructed and arranged to maintain contact pressure of said traction wheel against said vehicle wheel.

5

17. An anti-skid device for use in cooperation with a vehicle wheel for positioning a traction member beneath the vehicle wheel, said anti-skid device comprising:

a frame assembly constructed and arranged to be attached to a vehicle;

10 a swing arm pivotally connected to said frame assembly by way of a double pivot link, said swing arm including a traction wheel with at least one traction member thereon; and

a linear actuator having an extendable shaft is assembled to said swing arm by way of a connector, wherein extension of said shaft deploys said swing arm such that said  
15 traction wheel is placed against said vehicle wheel.

18. The anti-skid device of claim 17 wherein said traction wheel is connected to said swing arm by a wheel bolt.

20 19. The anti-skid device of claim 17 wherein said swing arm includes a pivot end constructed and arranged with two clearance holes.

20. The anti-skid device of claim 17 which further includes a biasing spring constructed and arranged to maintain contact pressure of said traction wheel against said  
25 vehicle wheel.